

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/079440 A2

(51) International Patent Classification: Not classified

24C, Cincinnati, OH 45220 (US). **NESBIT, Christopher, J.** [US/US]; 312 Rainbow Ridge, Cincinnati, OH 45215 (US). **NESBITT, Daniel, Frederick** [US/US]; 8906 Terwilliger Trail, Cincinnati, OH 45249 (US).

(21) International Application Number: PCT/US2005/004996

(74) Agent: **NESBITT, Daniel, F.**; Hasse & Nesbitt LLC, 7550 Central Park Blvd., Mason, OH 45040 (US).

(22) International Filing Date: 17 February 2005 (17.02.2005)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

(26) Publication Language: English

(30) Priority Data: 60/521,076 17 February 2004 (17.02.2004) US

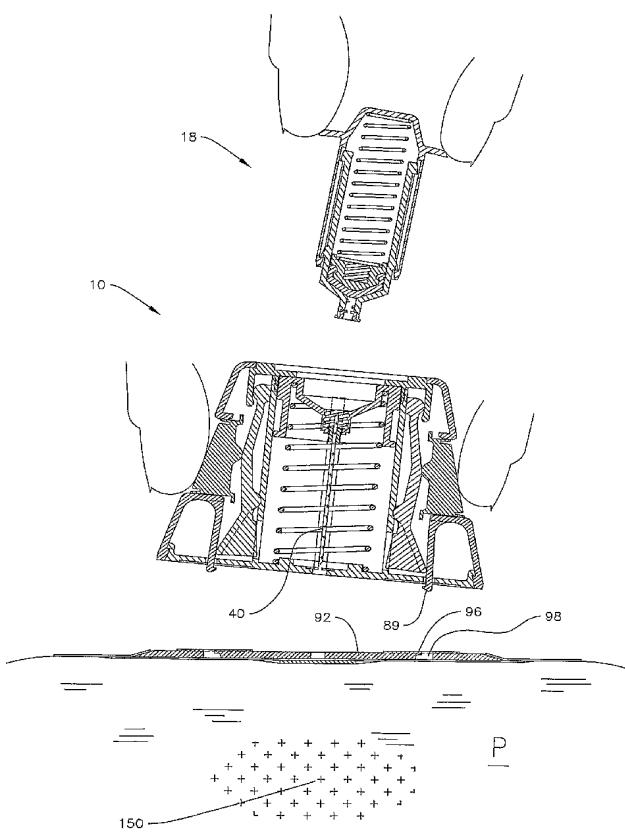
(71) Applicant (for all designated States except US): **CHILDREN'S HOSPITAL MEDICAL CENTER** [US/US]; 3333 Burnet Avenue, Cincinnati, OH 45229 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WALL, Eric, James** [US/US]; 3480 Tiffany Ridge Lane, Cincinnati, OH 45241 (US). **WARD, Jarvis** [US/US]; 3411 Clifton Ave., Apt.

[Continued on next page]

(54) Title: IMPROVED INJECTION DEVICE FOR ADMINISTERING A VACCINE



(57) Abstract: An injection device that self-administers a painless vaccine injections. The injection device can be secured to the patient's skin via a separable base portion of the housing of the device, which can be separated from the device when removing the housing and syringe assemblies for disposal. The injection device can provide a method for substantially painless injections of vaccine and other medication into a patient that does not require the use of an anesthetic, that does not require the medical personnel to spend a substantial amount of time performing the injection procedure, that is relatively simple and inexpensive to perform and operate, and that provides a relatively high degree of safety for both the medical personnel and for the patient. The injection device is configured for easy handling, and is manually-powered by the use of the hand or fingers of the medical technician. The device can also comprise a plurality of vaccine syringes and injection needles for administering a plurality of injections of different vaccines at the same time with a single device.

WO 2005/079440 A2



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,*

SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

- *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.